

AMENDED SET OF CLAIMS

1. Process for making a polyethylene multi-filament yarn comprising the steps of
 - a) spinning at least one filament from a solution of ultra high molecular weight polyethylene in a solvent;
 - b) cooling the filament obtained to form a gel filament;
 - c) removing at least partly the solvent from the gel filament;
 - d) drawing the filament in at least one drawing step before, during or after removing solvent;
 - e) applying a spin finish at least once in an amount of 0,1-10 mass% based on the filament, to a filament that contains less than 50 mass% of the solvent; the spin finish comprising at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C; and
 - f) removing the spin finish by subsequently exposing the filament to a temperature of below the melting temperature of the filament, such that carbon and oxygen atomic concentrations at the surface of the filament of at least 95 % C and at most 5 % O, as measured by XPS analysis, result.
2. Process according to claim 1, wherein the spin finish comprises a volatile compound that contains in addition to C and H also at least one O atom, or water.
3. Process according to claim 1 or 2, wherein the spin finish is applied to a filament containing less than 10 mass% of the solvent.
4. Process according to any one of claims 1-3, wherein the spin finish is applied in an amount of about 0,2-5 mass%.
5. Process according to any one of claims 1-4, wherein the spin finish comprises at least one alcohol and/or ketone and water.
6. Process according to any one of claims 1-5, wherein the spin finish comprises at least 99 mass% of at least one volatile compound.
7. Process according to any one of claims 1-6, wherein the volatile compound has a boiling point from 50 to 180 °C.
8. Process according to any one of claims 1-7, wherein the spin finish substantially comprises water.
9. Process according to any one of claims 1-8, wherein the spin finish is removed by exposing the filament to a temperature of up to about 5 °C below the melting temperature of the filament.

AMENDED SHEET

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AMENDED SET OF CLAIMS (continued)

10. Process according to any one of claims 1-9, wherein removing the spin finish coincides with a drawing step.
11. Polyethylene multi-filament yarn obtainable by the process according to any one of claims 2-10, which yarn is substantially free from spin finish residues, containing less than 500 ppm polyalkylene oxide derivatives and less than 20 ppm of potassium as determined with NMR spectroscopy and NAA analysis, respectively, and which yarn has a tensile strength of at least 30 cN/dtex.
12. Process for converting polyolefin fibres that are substantially free from spin finish residues into a semi-finished or end-use product, comprising the steps of
 - a) applying 0,5-10 mass% based on the fibres of a spin finish, which spin finish comprises at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C; and
 - b) removing the spin finish by exposing the fibres during or after further converting steps to a temperature of below the melting temperature of the fibres.
13. Process according to claim 12, wherein the spin finish comprises a volatile compound that contains in addition to C and H also at least one O atom, or water.
14. Process according to claim 12 or 13, wherein the polyolefin fibres are gel-spun UHMwPE fibres.
15. Semi-finished or end-use product obtainable by the process according to claim 13 or 14, having carbon and oxygen atomic concentrations at the surface of at least 95 % C and at most 5 % O, as measured by XPS analysis, and containing less than 500 ppm polyalkylene oxide derivatives and less than 20 ppm of potassium as determined with NMR spectroscopy and NAA analysis, respectively.
16. Use of the polyethylene yarn according to claim 11, or the semi-finished or end-use product according to claim 15 in biomedical applications.
17. Biomedical product comprising the polyethylene yarn according to claim 11, or the semi-finished or end-use product according to claim 15.
18. Use of a composition comprising at least 95 mass% of at least one volatile compound having a boiling point at 0,1 MPa pressure of from 30 to 250°C as a spin finish in a process for making polyolefin fibres or for converting polyolefin fibres into a semi-finished or end-use product.